

COMPONENT MOUNTING TRACK

Field of the Invention

The invention relates to an elongate track for mounting electrical components in an electrical control panel.

Description of the Prior Art

Electrical control panels hold a large number of electrical components which must be wired together. The components include terminal blocks, power supplies, relays and surge suppressors necessary for supplying electrical systems with power and data lines and the like. To facilitate mounting the components in a panel and routing and organizing the wires leading to and from the components, different mounting tracks have been developed. The tracks support the components a distance from the panel to facilitate mounting and arranging the components and positioning wires that run between the components.

Figure 1 shows a prior art extruded mounting track 10. Track 10 has a component mounting rail 12 joining wall 14 and mounting foot 16 extending to one side of wall 14. Components are mounted on rail 12. Wires from the components are positioned to either side of joining wall 14. The track 10 is mounted to a flat surface, typically the back wall of a control panel, by screws or other fasteners extending through apertures 18 in foot 16.

Mounting the track to a flat surface presents difficulties. The apertures 18 are positioned offset from

the center of rail 12. A large tool such as an oversized screw driver or standard nut driver cannot directly access the apertures to drive a screw into the panel wall. Drivers must apply force to fasteners at a non-perpendicular angle, increasing the amount of time needed for mounting the track and increasing the chance that a fastener will be driven into the panel at a non-perpendicular angle or that the fastener will become damaged in the process.

Accordingly, there is a need for an electrical component mounting rail having centered mounting slots which allow direct access to mounting apertures and facilitate positioning wires extending from mounted components.

Summary of the Invention

The invention is a mounting track that allows direct, perpendicular access to the mounting apertures in the track foot by a fastening tool. Access is achieved through openings on the component mounting rail located directly above the mounting apertures. These openings are sufficiently large to allow a screwdriver or other fastener mounting tool direct access to the mounting apertures at angles normal to the track's mounting foot. The wall joining the track's foot and rail is offset from the lateral center of the rail and foot to permit a fastener to access the apertures. The offset placement of the wall also creates a cavity for routing wires under the track. Large rail openings are provided in the wall to allow wire routing through the mounting rail.

Description of the Drawings

Figure 1 illustrates a prior art mounting track;

Figure 2 is a top view of the disclosed track;

Figure 3 is a sectional view taken along line 3--3 of Figure 2;

Figure 4 is a bottom view of the disclosed track;

Figure 5 is a side view of the disclosed track; and

Figure 6 is a sectional view of the disclosed track, showing a screwdriver mounting the track to a panel wall.

Description of the Preferred Embodiments

In a preferred embodiment of the invention, the track 20 is formed from an aluminum extrusion having a uniform transverse cross section and has a mounting rail 22, a flat mounting foot 24 below the rail and a vertical wall 26, joining rail 22 to foot 24. Wall 26 extends from one side of foot 24 to rail 22, preferably at a right angle to the foot and the rail.

Wall 26 joins rail 22 at rail base 30. Base 30 is above and parallel to foot 24. Vertical sidewalls 32 extend up from the sides of base 30 at right angles, away from the foot and are parallel to wall 26. Flanges 34 extend outward from the upper edges of vertical sidewalls 32 and parallel to base 30. The configuration of rail 22 is conventional and allows electrical components to be mounted upon it.

Wall 26 joins rail base 30 at a position offset from the lateral center of the rail. The base 30, wall 26, and

foot 24 define a cavity 36 through which the wires connected to components mounted on the rail may be routed.

Figure 5 shows a side view of track 20. Apertures 38 are spaced at regular intervals along wall 26 to allow wires in cavity 36 to be routed to either side of wall 26.

Regularly spaced mounting apertures 28 extend through foot 24 to permit mounting track 20 to a flat surface. Mounting apertures 28 are positioned under rail base 30 and adjacent to wall 26.

Figure 2 is a top view of track 20. Large rectangular track apertures 40 are spaced regularly along base 30. Apertures 40 are positioned directly above smaller foot apertures 28. Track apertures 46 are positioned adjacent to and are contiguous with wall 26 with a major axis running along the length of the track and a traverse minor axis. Track apertures 46 are larger than foot apertures 28 and are large enough to accept fastener driving tools.

Figure 4 shows the bottom of the track. Foot apertures 28 are rectangular with a major axis of the rectangle running along the length of the track and parallel to wall 26 and a traverse minor axis. Apertures 28 allows flexibility in mounting track 20 to a support surface with pre-drilled holes. The pre-drilled holes may not conform to exact locations on the rail for mounting the rail to a support surface. Thus, the foot apertures 28 are slot-shaped to allow shifting of the track to fit misaligned holes in the panel. Track apertures 40 are similarly slot

shaped to assure that a tool can be held perpendicular during screwing of a fastener into a wall panel regardless of where a fastener is positioned within a given foot aperture.

Figure 6 shows the track being mounted to a support surface. A screwdriver 42 extends through aperture 40 in rail 22 to reach foot aperture 28. Screwdriver 42 is held at a right angle to foot 24 and may engage a screw 44 squarely to mount track 20 to surface 46.

While I have illustrated and described a preferred embodiment of my invention, it is understood that this is capable of modification, and I therefore do not wish to be limited to the precise details set forth, but desire to avail myself of such changes and alterations as fall within the purview of the following claims.